



**PATENT**  
Attorney Docket No. 211843-00032

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Thomas N. Horsky  
 Serial No.: 10/519,699  
 Filed: September 14, 2005  
 Title: Ion Implantation Device and a Method of  
 Semiconductor Manufacturing by the  
 Implantation of Boron Hydride Cluster Ions  
 Group Art Unit: 2881  
 Confirmation No.: 6928

Mail Stop Amendment  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

This document is being filed pursuant to the provisions of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

**I. TIME OF FILING**

This document is being filed in accordance with 37 C.F.R. § 1.97(b) as it is believed to be filed:

- within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d);
- within three months of the date of entry of the national stage as set forth in § 1.491 in an international application;
- before the mailing of a first Office action on the merits; or
- before the mailing of a first Office action after the filing of a request for continued examination under § 1.114.

**OR**

\_\_\_\_ This document is being filed in accordance with 37 C.F.R. § 1.97(c) as it is believed to be filed before the mailing date of any of a final action under § 1.113, a notice of allowance under § 1.311, or an action that otherwise closes prosecution in the application. This Statement is accompanied by one of:

- \_\_\_\_ the following statements; or
- \_\_\_\_ Each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.
- \_\_\_\_ No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.

\_\_\_\_ The fee set forth in § 1.17(p). Fee Transmittal Form PTO/SB/17 is attached.

**OR**

\_\_\_\_ This document is being filed in accordance with 37 C.F.R. § 1.97(d) as it is believed to be filed on or before the payment of the issue fee and is accompanied by one of the following statements and the fee set forth in § 1.17(p). Fee Transmittal Form PTO/SB/17 is attached.

- \_\_\_\_ Each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.
- \_\_\_\_ No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Applicant(s) respectfully request that the documents listed on the attached Form PTO/SB/08A and/or Form PTO/SB/08B be considered and made of record.

**OR**

\_\_\_\_ It is requested that this Statement and enclosures be placed in the file. It is understood that the cited references will not be considered by the Office.

## II. FOREIGN PATENT OFFICE COMMUNICATIONS (if applicable)

One or more of the items of information contained in the information disclosure statement were cited in a communication from a foreign patent office in a counterpart foreign application.

\_\_\_\_\_ A copy of the search report is attached.

## III. COPIES OF CITED REFERENCES

\_\_\_\_\_ Because this application was filed prior to June 30, 2003, copies of the document(s) listed on the attached Form(s) PTO/SB/08A and/or PTO/SB/08B are attached.

**OR**

Because this application was filed after June 30, 2003, copies of non-U.S. patent citations as listed on the attached Form(s) PTO/SB/08A and/or PTO/SB/08B are attached.

**AND (if applicable)**

\_\_\_\_\_ All cited U.S. pending (non-published) applications listed on Form PTO/SB/08A are stored in the USPTO's IFW system. Copies are therefore not provided.

**OR**

\_\_\_\_\_ One or more of the cited U.S. pending (non-published) applications (filed prior to June 30, 2003) as listed on Form PTO/SB/08A has not been stored in the USPTO's IFW system. Copies for the unstored applications are provided herewith.

## IV. REMARKS

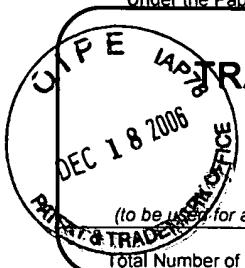
The above constitutes information that an Examiner may find material to the examination of the subject application; however, it does not negate the patentability of the subject invention. Furthermore, it is not intended that submission of this information be taken as a representation that a search has been made or that no information which is more material exists.

The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment with respect to this communication to Deposit Account No. 50-1214. A duplicate copy of this communication is enclosed.

Date: December 6, 2006

By:

  
John S. Pariagwas  
Attorney or Agent for Applicant(s)  
Reg. No. 31,051



# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

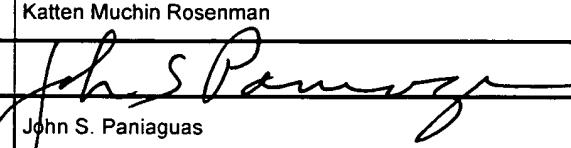
Total Number of Pages in This Submission

Application Number	10/519,699
Filing Date	September 14, 2005
First Named Inventor	Thomas N. Horsky
Art Unit	2881
Examiner Name	Not Yet Assigned
Attorney Docket Number	211843-00032

## ENCLOSURES (Check all that apply)

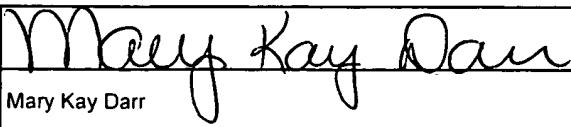
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input checked="" type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please Identify below):
Remarks		

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Katten Muchin Rosenman		
Signature			
Printed name	John S. Paniaguas		
Date	December 6, 2006	Reg. No.	31,051

## CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Mary Kay Darr	Date	December 6, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Effective on 12/08/2004.  
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

**FEET TRANSMITTAL**  
For FY 2006

DEC 18 2006

Applicant claims small entity status. See 37 CFR 1.27

TRADES  
TOTAL AMOUNT OF PAYMENT (\$)

Complete if Known	
Application Number	10/519,699
Filing Date	September 14, 2005
First Named Inventor	Thomas N. Horsky
Examiner Name	Not Yet Assigned
Art Unit	N/A
Attorney Docket No.	211843-00032

## METHOD OF PAYMENT (check all that apply)

Check  Credit Card  Money Order  None  Other (please identify): \_\_\_\_\_

Deposit Account Deposit Account Number: 50-1214 Deposit Account Name: Katten Muchin Rosenman

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

Charge fee(s) indicated below  Charge fee(s) indicated below, except for the filing fee

Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17  Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

## FEE CALCULATION

## 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fees Paid (\$)
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

## 2. EXCESS CLAIM FEES

## Fee Description

Each claim over 20 (including Reissues)

Each independent claim over 3 (including Reissues)

Multiple dependent claims

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Small Entity	Fee (\$)	Fee (\$)
_____	- 20 or HP = _____	_____	_____ x _____ = _____	50	25	
_____	HP = highest number of total claims paid for, if greater than 20.			200	100	
_____	Indep. Claims	Extra Claims	Fee (\$)	360	180	
_____	- 3 or HP = _____	_____	_____ x _____ = _____	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)

HP = highest number of independent claims paid for, if greater than 3.

## 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

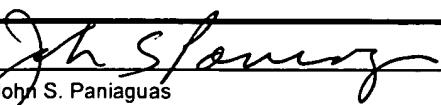
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____	- 100 = _____	/ 50 = _____ (round up to a whole number)	_____ x _____ = _____	

## 4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): \_\_\_\_\_

## SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 31,051	Telephone 312-902-5200
Name (Print/Type)	John S. Paniaguas	Date December 6, 2006	

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <small>DEC 18 2006</small> <small>(use as many sheets as necessary)</small>		<b>Application Number</b>	10/519,699
		<b>Filing Date</b>	September 14, 2005
		<b>First Named Inventor</b>	Thomas N. Horsky
		<b>Group Art Unit</b>	2881
		<b>Examiner Name</b>	Not Yet Assigned
		<b>Attorney Docket Number</b>	211843-00032

## U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. 1	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup> – Number <sup>4</sup> – Kind Code <sup>5</sup> (if known)			
	B1	Intl. Search Report, PCT/US03/20197			T <sup>6</sup>

## OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

OTHER PRIORITY - NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher city and/or country where published
	C1	BOGGIA et al., Study of a Trapped Ion Source, IEEE Journal, pp. 1433-35
	C2	BRAUTTI et al., Trapped Ion Source, IEEE Journal, 1988, pp. 2729-2731
	C3	CHENGLU et al., Nuclear Instruments and Methods in Physics Research, 1989, pp. 384-86
	C4	DEFINO et al., J. Electrochemical Society, Vol. 133, No. 9, 1986, pp. 1900-04

	C5	JACOBSON et al., Decaborane, an Alternative Approach to Ultra Low Energy Ion Implantation, IEEE Journal, 2000, pp. 300-303	
	C6	KISHIMOTO, A High-Current Negative-Ion Implanter and its Application for Nanocrystal Fabrication in Insulators, IEEE Journal, 1999, pp. 342-45	
	C7	OLSEN et al., J. Amer. Chem. Society, Vol. 90, No. 15, July 17, 1968, pp. 3946-51	
	C8	TSUBOUCHI et al., Beam Characterization of Mass-Separated, Low-Energy Positive and Negative Ions Deposition Apparatus, IEEE Proc. Of the XIIth Intl. Conf. on Ion Implantation Technology, June 22-26, 1998, pp. 350-53	
	C9	YAMADA, Applications of Gas Cluster Ion Beams for Materials Processing,	
<b>Examiner Signature</b>		<b>Date Considered</b>	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.